

ABSTRACT

A heat treatment process that will restore the mechanical properties of an aircraft engine article that includes a cast Inconel 718 portion welded to a wrought portion. The heat treatment process includes placing an article that includes the Inconel 718 cast portion into a heat treatment chamber, evacuating the chamber to a
5 suitable atmosphere, heating the chamber in a manner that minimizes distortion of the cast portion to a temperature in the range of 1950°F to 2050°F, holding the temperature in that range for a period of time sufficient to solution all the delta phase precipitates, and then cooling the article to room temperature in a manner that minimizes distortion of the article. After solution heat treatment, the wrought portion
10 of the engine part can be removed and replaced and the engine article can be reprocessed.